REMARKS

In response to the Examiner's Office Action, Paper No./Mail Date 20070503, dated May 8, 2007, Applicant has carefully studied the references cited by the Examiner and the Examiner's comments relative thereto.

Claims 1-10 and 12-24 have been amended.

Claim 25 has been cancelled.

Claims 1-10 and 12-24 remain in the application.

No new matter has been added.

Reconsideration of the application, as amended, is respectfully requested.

35 U.S.C. § 102(b)

The Examiner rejected Claims 1-2, 5, 8-10, 12, 13 , 16-19 and 22 as being anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,149,579 to Park et al. for POLYPROPYLENE FOAM SHEETS. More specifically, the Examiner stated, "Park uses carbon dioxide as a blowing agent to form the foam... therefore, it is not seen that the foam cells could not have been substantially, inherently filled with carbon dioxide".

Claim 1 of the application, as amended, reads as follows:

> A blow molded container, comprising:
>
> a first layer of plastic suitable for blow molding; and
>
> a second layer of plastic suitable for blow molding contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells are substantially filled with and contain one of carbon dioxide and nitrogen.

Claim 22 of application reads as follows:

> A multilayer preform for forming a blow molded container, comprising:
>
> a first layer of plastic suitable for blow molding; and
>
> a second layer of plastic suitable for blow molding contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen.

Claims 1 and 22 recite a layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen. The carbon dioxide and nitrogen remains in the cells of the foam. In Park, the "blowing agent is used primarily for controlling the density of the foam" [column 10, lines 33-34]. Most importantly, Park discloses that the blowing agent "comes out of solution creating bubbles when the pressure and temperature decrease" [column 10, lines 34-37]. Furthermore, Park discloses that the foam sheet is "aged for a period of time to allow for diffusion of the blowing agent and air through the cell walls" (emphasis added) [column 8, lines 21-25]. Accordingly, because the blowing agent and air diffuses from the cell walls, the cells are not, and cannot be, substantially filled with the blowing agent as required by Claims 1 and 22. Thus, the foam sheet according to Park uses a foaming agent for controlling the density of the foam only and the foaming agent is allowed to diffuse out of the cell walls.

In its Decision on Appeal of the present case (Appeal No. 2007-0404), the Board of Patent Appeals and Interferences (BPAI) noted that all of the appealed claims require that the foam cells "contain carbon dioxide" and, giving the claim language its broadest reasonable interpretation, that the claims include "any amount of carbon dioxide, even infinitesimal amounts" (see Decision on Appeal, pages 6-7). The BPAI then noted "...the Specification does not place any limits on the amount of carbon dioxide present in the foam cells", suggesting a limitation on the amount of carbon dioxide in the foam cells, such as substantially filling the foam cells, is novel in view of Park (see Decision on Appeal, page 7). The BPAI also noted that "Park teaches that the foam cells contain carbon dioxide (the blowing agent) at some point in time before the blowing agent diffuses through the cell wall during aging" (emphasis in original) (see Decision on Appeal, page 7). Because the foam cells of Park allow for the diffusion of carbon dioxide through the cell wall, Park teaches away from the present invention. The claims, as amended, of the present invention include "a second layer of plastic suitable for blow molding contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells are substantially filled with and contain one of carbon dioxide and nitrogen" (emphasis added). It is apparent, therefore, that Park does not anticipate the claims as amended. Park does not disclose a container or preform having a foamed layer having foam cells substantially filled with and containing one of carbon dioxide and nitrogen.

Furthermore, the foam sheets of Park have substantially uniform properties and adapted to be reheated so as to be able to thermoform the sheets into a desired article, namely, food trays. The thermoforming process comprises heating the foam sheet to a temperature where it may be deformed under pressure, supplying the softened foam sheet to a forming mold, applying pressure to the foam sheet and forming mold, and cooling the foamed sheet to form a rigid or semi-rigid article having the shape of the forming mold [column 11, lines 55-64]. The article formed with the foamed sheet of Park is formed via compression molding wherein a substantially uniform force is exerted on the entire foam sheet to obtain the article having the shape of the forming mold.

The container having a foam layer of the present invention is formed with a stretch blow molding process. In the stretch blow molding process, a preform having a finish portion with high dimensional tolerance is heated above its glass transition temperature. High pressure air is then blown into the heated preform to cause the the preform, but not the finish, to expand and take the shape of a mold cavity in the desired shape of the container. Usually the preform is stretched or drawn with a core rod as part of the process (see Background of the Invention, lines 17-22). The core rod applies a direct force on a portion of the preform to draw and stretch the preform before and during the blow molding, while the remainder of the preform, including the finish, is not contacted or drawn by the core rod. Park is devoid of any mention of any blow molding process.

As discussed above, Park does not disclose a layer of plastic "wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen", Park disclose not disclose blow molding processes, nor does Park disclose a foam sheet having a portion with specific dimensional tolerances or a portion not subjected to the molding process. Accordingly, Park does not anticipate Applicant's invention. As a result, the Park reference cannot properly serve as a basis for rejection of independent Claims 1 and 22 or Claims 2, 5, 8-10, 12, 13 , and 16-19, which depend therefrom, under 35 U.S.C. 102(b) and are allowable.

35 U.S.C. § 102(e)

The Examiner also rejected Claims 1-10, 22, and 23 as being anticipated under 35 U.S.C. § 102(e) by U.S. Patent No. 6,485,819 to Hayes et al. The Examiner stated, "the foam cells would have contained carbon dioxide" because "the layer of copolyester is foamed by using carbon dioxide as a blowing agent".

Claims 1 and 22 of the application may be read above.

Claim 23 of the application reads as follows:

A multilayer preform for forming a blow molded container, comprising:

a first layer of polyethylene terephthalate suitable for blow molding; and

a second layer of plastic suitable for blow molding contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen.

Claims 1, 22, and 23 recite a layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen. The nitrogen remains in the cells of the foam. A careful examination of the Hayes patent discloses polyesters foamed by a variety of methods. The Examiner stated, "the foam cells would substantially [be] inherently filled with contained carbon dioxide" because "the layer of copolyester is foamed by using carbon dioxide as a blowing agent". However, Hayes discloses that in selecting the method of foaming the polyesters only a desired foaming action is sought [column 15, lines 60-61].

Hayes discloses injecting an inert gas such as carbon dioxide into the melt during extrusion or molding process [column 15, line 35 et seq.]. It is clear from Hayes that the foaming method is chosen only for a "desired foaming action in the polymeric melt" [column 15, lines 60-63] and nothing more. Hayes does not disclose a "foam plastic layer wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen", as found in the present application.

Hayes does not disclose a layer of plastic "formed as a foam wherein the foam cells are substantially filled with and contain one of carbon dioxide and nitrogen.". Accordingly, Hayes does not anticipate Appellant's invention. As a result, the Hayes reference cannot properly serve as a basis for rejection of independent Claims 1, 22, and 23 or Claims 2-10 which depend, directly or indirectly, therefrom under 35 U.S.C. 102(e).

35 U.S.C. § 103(a)

The Examiner rejected Claims 1-2, 5, 8-10, 12, 13 , 16-19 and 22 as being obvious over Park and Claims 1-10, 22, and 23 as being obvious over Hayes under 35 U.S.C. § 103(a).

The Examiner also rejected Claims 3, 4, 6, 7, 14, 15, 20, 21, and 23-25 as being obvious over Park further in view of Hayes; Claims 12-17 and 24 as being obvious over Hayes further in view of Park; Claims 18-21 and 25 as being obvious over Hayes further in view of U.S. Patent No. 5,149,579 to Haase et al.; and Claims 1-10, 22, and 23 as being obvious over U.S. Patent No. 5,919,547 to Kocher et al. further in view of Hayes. Claim 25 has been cancelled from the application, accordingly the Examiner's arguments regarding Claim 25 are moot.

Applicant respectfully asserts that the Examiner has failed to establish a prima facie case of obviousness in regards to Claims 1 and 22-24 because the one skilled in the art would not be motivated or have any suggestion to combine the references. More importantly, even if the references are combined, the combination of references does not produce each and every limitation of independent Claims 1 and 22-24. All of the independent claims recite a plastic layer "formed as a foam wherein the foam cells are substantially filled with and contain one of carbon dioxide and nitrogen.." Indeed, none of the cited references require the foam cells to be substantially filled with one of carbon dioxide and nitrogen. As a result, no combination of references can properly serve as a basis for rejection of independent Claims 1, 22-24 or Claims 2-21, dependent therefrom, under 35 U.S.C. 103(a).

Park discloses a container having a polypropylene foam layer, a functional layer, and a polypropylene foam layer [column 8, lines 30-60]. Park does not, however, disclose a foam layer made from polyethylene terephthalate for improved biodegradation rate and thermal properties. The Examiner even notes this, stating "Park does not teach the foam layer made from a polyethylene terephthalate". The Examiner asserts that Hayes cures the defect of Park. The Examiner states, "Hayes...teaches... a foam layer made from a copolyester that exhibit (sic) an improved rate of biodegradation more amendable to solid waste disposal". Indeed, Hayes does disclose laminates and multilayer films with improved characteristics. However, Hayes does not disclose the combination of the copolyester film with another material with similarly desired characteristics amenable to solid waste disposal. In fact, Hayes merely discloses laminates and "film... combined with other polymeric materials... with improved characteristics, such as water vapor resistance" [column 9, lines 61-64; column 12, lines 38-42]. The addition of the film or laminate with another polymeric material could significantly alter the degradation rate of the container thereby changing the characteristics to be less amenable to solid waste disposal. Indeed, a thorough examination of Hayes shows it is

completely devoid of any disclosure regarding multilayer objects comprised of identical materials or materials with similar biodegradation characteristics.

Accordingly, one skilled in the art would have no motivation to combine the multilayer container of Park with the laminate or film having the increased biodegradation rate and thermal principles of Hayes because Hayes does not disclose multilayer objects comprised of identical materials or materials with similar biodegradation characteristics, in any manner.

Even if the Park and Hayes references are combined, the combination does not produce each and every limitation of independent Claims 23-24, which recite a layer of plastic formed as a foam wherein the foam cells are substantially filled with one of carbon dioxide and nitrogen. As discussed above, Park discloses that the blowing agent "comes out of solution creating bubbles when the pressure and temperature decrease". Hayes merely discloses a blowing agent utilized merely for a "desired foaming action in the polymeric melt" and is completely devoid of any teaching or suggestion of multilayer objects comprised of identical materials or materials with similar biodegradation characteristics. Therefore, the combination of references fails to teach or suggest each and every limitation of independent Claims 23-24. Accordingly, even if Park and Hayes are combined, each and every limitation of Appellant's invention is not represented. As a result, this combination of references cannot properly serve as a basis for rejection of independent Claims 23-24 nor any of the dependent claims under 35 U.S.C. § 103(a).

The Examiner has also failed to establish a prima facie case for independent Claim 24 under 35 U.S.C. § 103(a) as being unpatentably obvious over Hayes in further view of Park. Independent Claim 24, like independent Claims 1, 22, 23, and 24 recites a plastic layer "formed as a foam wherein the foam cells are substantially filled with and contain one of carbon dioxide and nitrogen.". As discussed above, neither Park nor Hayes requires the foam cells to be substantially filled with one of carbon dioxide and nitrogen. Therefore, even if there were a motivation or suggestion to combine the references, the combination does not produce the limitation that the foam cells be substantially filled with one of carbon dioxide and nitrogen.

The Examiner has also failed to establish a prima facie case for independent Claim 25 under 35 U.S.C. § 103(a) as being unpatentably obvious over Hayes in further view of Hasse. Claim 25, like independent Claims 1 and 22-24 recites a plastic layer "formed as a foam wherein the foam cells are substantially filled with and contain one of carbon dioxide and

nitrogen." As discussed above, Hayes does not require the foam cells to be substantially filled with one of carbon dioxide and nitrogen. Hasse is completely devoid of mention of blowing agents, a foaming process, polyethylene terephthalate, foam cells containing carbon dioxide or nitrogen, or any mention of carbon dioxide or nitrogen whatsoever. Therefore, even if there was a suggestion to combine the references, the combination does not produce the limitation that the foam cells be substantially filled with one of carbon dioxide and nitrogen. However, because Claim 25 has been cancelled from the application, the Examiner's arguments regarding Claim 25 are moot.

Lastly, the Examiner has failed to establish a prima facie case for independent Claims 1, 22, and 23 under 35 U.S.C. § 103(a) as being unpatentably obvious over Kocher in further view of Hayes. Claims 1, 22, and 23, like independent Claim 24, recite a plastic layer "formed as a foam wherein the foam cells are substantially filled with and contain one of carbon dioxide and nitrogen". As discussed above, Hayes does not require the foam cells to be substantially filled with one of carbon dioxide and nitrogen. As the Examiner pointed out, Kocher similarly "does not teach the use of carbon dioxide to form the foamed support member" nor does Kocher disclose that the foam layer contains nitrogen. Therefore, even if there were a suggestion to combine the references, the combination does not produce the limitation that the foam cells contain nitrogen.

Accordingly, withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

The other references cited by the Examiner, but not applied, have been studied and are not considered to be any more pertinent than the references relied upon by the Examiner.

It is submitted that the claims distinctly define the Applicant's invention and distinguish the same from the prior art. Reconsideration of the application, as amended, is respectfully requested. A formal Notice of Allowance is solicited.

While the Applicant's attorney has made a sincere effort to properly define Applicant's invention and to distinguish the same from the prior art, should the Examiner deem that other language would be more appropriate, it is requested that a telephone interview be had with the Applicant's attorney in a sincere effort to expedite the prosecution of the application.